

Figure 1: 161P2F10B SSH sequence of 182 nucleotides (SEQ. ID. No. 742)

1 GATCACACAT TAGGTTATNG ACTTCAATAT TTTCAAATGG TTCAACTTCA GTCTTCTCTT
61 TAAAACCTGGG TCCATGTGCC AAGAAAGATA GCCTCCATGC TCCTAAACTC ATTGTTATAA
121 CCATGGTTGC CTCCTCCACA ATTTGTATT GATTTACTCC TAACAGCCAG CCACTGTTGA
181 TC

Figure 2.

Figure 2A. The cDNA (SEQ ID. NO. : 744) and amino acid sequence (SEQ ID. NO. : 743) of 161P2F10B. The 3858 nucleotide sequence of 161P2F10B is shown. The codon for the start methionine is underlined. The open reading frame extends from nucleic acid 44-2671 including the stop codon.

M E S T L T
1 ctactttattctgataaaaacaggctatgcagctaccaggacaATGGAATCTACGTTGAC
7 L A T E Q P V K K N T L K K Y K I A C I
161 TTTAGCAACGGAAACACCGTTAAAGAAGAACACTTTAAGAAATAAAAATAGCTTGCAT
27 V L L A L L V I M S L G L G L G L G L R
121 TGTTCTTCTTGCTTTGCTGGTGATCATGTCACTGGTATTAGGCCTTGGCTGGACTCG
47 K L E K Q G S C R K K C F D A S F R G L
181 GAAACTGGAAAGCAAGGCAGCGTGCAGGAAGAGTGCTTGATGCCATATTAAGAGGACT
67 E N C R C D V A C K D R G D C C C W D F E
241 GGAGAACTGCCGGGTGTGATGTGGCATGTAAAGACCGAGGTGATIGCTGTGGATTTGA
87 D T C V E S T R I W M C N K F R C G E T
301 AGACACCTGTGTGGAAATCAACTCGAATATGGATGTGCAATAAATTCGTTGTGGAGAGAC
107 R L E A S L C S C S D D C L Q K K D C C
361 CAGATTAGAGGCCAGGCTTTGCTCTGTTCAGATGACTGTTGCAAGAAAGATGTCT
127 A D Y K S V C Q G E T S W L E E N C D T
421 TGCTGACTATAAAGAGTTTGCCAAGGAGAAACCTCATGGCTGGAAAGAAACTTGTGACAC
147 A Q Q S Q C P E G F D L P P V I L F S M
481 AGCCCCAGCAGTCTCAGTGCCCAGAGGGTTGACCCTGCCACCAGGTATCTTGTTTCTAT
167 D G F R A E Y L Y T W D T L M P N I N K
541 GGATGGATTTAGGCTGAATATTTTATACACATGGATCTTTATGCAAATATCAAAAA
187 L K T C G I H S K Y M R A M Y P T K T F
601 ACTGAAAACATGTGGAAATTCATTCAAAAATACATGAGAGGATTGTATGCCCAAACCT
207 P N H Y T I V T G L Y P E S H G I I D N
661 CCCAAATCATTACACCCATGTCAGGGCTGTATCCAGATGTCAATGGCATCATGGCA
227 N M Y D V N L N K N F S L S S K E Q N N
721 TAATATGTTATGTAAATCTCAACAAGAATTTTCATTTCTCAAGGAACAAAA
247 P A W W H G Q P M W L T A M Y Q G L K A
781 TCCAGCCTGGGTGGCACCAAATGTGGCTGACAGCAATGTTATCAAGTTAAAGU
267 A T Y F W P G S E V A I N G S F P S I Y
841 CGCTACCTACTTTGGCCGGATCAGAGTGGCTTAAATGGCTCCTTCCTTCCATAT
287 M P Y N G S V P F E E R I S T L L K W L
901 CATGCCTTACAACGGAAGTGTCCATGTAAAGAGGAGGATTTCTACATGTAAATGGCT

307 D L P K A E R P R F Y T M Y F E E P D S
961 GGACCTGCCAAAGCTGAAAAGACCCAGGTTTATACCATGTATTTGAAGAACCTGATTC
327 S G H A G G P V S A R V I K A L Q V V D
1021 CTCTGGACATGCAGGTGGACCAGTCAGTGCCAGAGTAATTAAAGCCTTACAGGTACTAGA
347 H A F G M L M E G L K Q R N L H N C V N
1081 TCATGCTTTGGGATGTTGATGGAAGGCCCTGAAGCAGCGGAATTGACAACATGTGTCAA
367 I I L L A D H G M D Q T Y C N K M E Y M
1141 TATCATCCTCTGGCTGACCATGGAATGGACCAGACTTATTGTAACAAGATGGAATACAT
387 T D Y F P R I N F F Y M Y E G P A P R I
1201 GACTGATTATTTCCCAGAATAAACCTCTACATGTACGAAGGGCCTGCCCGCAT
407 R A H N I P H D F F S F N S E E I V R N
1261 CCGAGCTCATAATATAACCTCATGACTTTTAGTTAATTCTGAGGAAATTGTTAGAAA
427 L S C R K P D Q H F K P Y L T P D L P K
1321 CCTCAGTTGCCGAAACCTGATCAGCATTCAGCCCTATTGACTCCTGATTGCCAAA
447 R L H Y A K N V R I D K V H L F V D Q Q
1381 GCGACTGCACTATGCCAAGAACGTCAAGAACATCGACAAAGTTCATCTTTGTGGATCAACA
467 W L A V R S K S N T N C G G G N H G Y N
1441 GTGGCTGGCTGTTAGGAGTAAATCAAATACAAATTGAGGAGGCAACCAGGTTATAAA
487 N E F R S M E A I F L A H G P S F K E K
1501 CAATGAGTTAGGAGCATGGAGGCTATCTTCTGGCACATGGACCCAGTTAAAGAGAA
507 T E V E P F E N I E V Y N L M C D L L R
1561 GACTGAAGTTGAACCATTGAAAATATTGAAGTCTATAACCTAATGTGTGATCTTCTACG
527 I Q P A P N N G T H G S L N H L L K V P
1621 CATTCAACCAGCACCAAACAATGGAACCCATGGTAGTTAAACCATCTCTGAAAGGTGCC
547 F Y E P S H A E E V S K F S V C G F A N
1681 TTTTATGAGCCATCCATGCAGAGGAGGTGTCAAAGTTCTGTTGTGGCTTGCTAA
567 P L P T E S L D C F C P H L Q N S T Q L
1741 TCCATTGCCACAGAGTCTTGTACTGTTCTGCCCTCACCTACAAAATGACTCAGCT
587 E Q V N Q M L N L T Q E E I T A T V K V
1801 GGAACAAGTGAATCAGATGCTAAATCTCACCCAAAGAAGAAATAACAGCAACAGTGAAGT
607 N L P F G R P R V L Q K N V D H C L L Y
1861 AAATTTGCCATTGGGAGGCCCTAGGGTACTGCAGAAGAACGTGGACCACTGCTCCTTTA
627 H R E Y V S G F G K A M R M P M W S S Y
1921 CCACAGGAAATATGTCAGTGGATTGGAAAAGCTATGAGGATGCCATGTGGAGTTCTAC
647 T V P Q L G D T S P L P P T V P D C L R
1981 CACAGTCCCCAGTTGGAGACACATGCCTCTGCCCTCCACTGTCCCAGACTGTCTGCG
667 A D V R V P P S E S Q K C S F Y L A D K
2041 GGCTGATGTCAGGGTCTCTCTGAGAGCCAAAATGTTCTTCTATTAGCAGACAA

687 N I T H G F L Y P P A S N R T S D S Q Y
2101 GAATATCACCCACGGCTTCCCTCATCCTCTGCCAGCAATAGAACATCAGATAGCCAATA
707 D A L I T S N L V P M Y E E F R K M W D
2161 TGATGCTTTAATTACTAGCAATTGGTACCIATGTATGAAGAATTCAAGAAAATGTGGGA
727 Y F H S V L L I K H A T E R N G V N V V
2221 CTACTTCCACAGTGTCTTCTTATAAAACATGCCACAGAAAGAAATGGAGATAATGTGGT
747 S G 'P I F D Y N Y D G H F D A P D E I T
2281 TAGGGACCAATATTGATTATAATTATGATGGCCATTGATGCTCCAGATGAAATTAC
767 K H L A N T D V P I P T H Y F V V L T S
2341 CAAACATTAGCCAACACTGATGTTCCCATCCAACACACTACTTGTGGTGTGACCAG
787 C K N K S H T P E N C P G W L D V L P F
2401 TTGTAAAAACAAGAGCCACACACCGGAAACTGCCCTGGTGGCTGGATGTCTTACCCCTT
807 I I P H R P T N V E S C P E G K P E A L
2461 TATCATCCCTCACCGACCTACCAACAGTGGAGAGCTGCTGAAGTAAACCAGAAGCTCT
827 W V E E R F T A H I A R V R D V E L L T
2521 TTGGGTTGAAGAAAGATTACAGCTCACATTGCCGGGTCGTGATGTAGAACTTCTCAC
847 G L D F Y Q D K V Q P V S E I L Q L K T
2581 TGGGCTTGACTTCTATCAGGATAAAAGTGCAGCCTGTCTGAAATTGGCAACTAAAGAC
867 Y L P T F E T T I *
2641 ATATTTACCAACATTGAAACCACTATTAAActtaataatgtctacttaataatataatt
2701 actgtataaaagtatttggcaaaatataagtgatttttctggagaattgtaaaataaa
2761 gtttctattttcctaaaaaaaaccggaattccgggcttggaggctgaggcagga
2821 gactcgctgaacccggaggcagagggttgcagtgagccaagattgcgcattgcactcc
2881 agagcctgggtgacagagcaagactacatctaaaaaaaaataaaaaaaaagtaa
2941 caataaaaataaaaaagaacagcagagagaatgagcaaggaaaaatgtcacaaactattgc
3001 aaaatactgttacactgggtggctctccaagaagatactggaatctcttagccatttgc
3061 ctttcagaagtagaaaaccgcaccaaccctctaagcggagaacatacgtatttttatta
3121 agtagctctgggaaggaaaataaaagtgtatagctccctgattggggaaaaatgcac
3181 aattataaaagaatgaagatgaaaaggcatgcttatgttgcatacacaaaaaaaattca
3241 caaacgttggtgaaaggaaaacagtatagaaaaacattacttaactaaaagctggaaaa
3301 tttcagttggatgcgactgacaaaaagaacgggattccaggcataaagtggcgtga
3361 gctacagagggcacatgtggctcagtgaaagacccctcaagattcaagttccatttgc
3421 cagagcaaaggcacttcgcaaggagaagggttaattatggtccaaaagccaagtgg
3481 aaagcgagcaatttcgcgcataactgcttccttagacagggtcgagtggggaaaaatacg
3541 acagtagcacacagtgacttattagccactgcccagaaacaggctgaacagccctggggagaca
3601 agggaaaggcagggtggagttgttgcataggagaaaaaggagagtttgcataaccagcaca
3661 tccactggagatgtggccaccagacccctcccaagtcataaaagtctgtgcctcatt
3721 gactcagccatcatgaccctggagagacccctgataccatctgcgcagtcggcagcaca

3781 ttaggcactcctgccccatcaacctgaccccccggatgggttccaggctccctgccccac
3841 ccattcaggccggaaattc

Figure 2B: The cDNA (SEQ ID. NO.: 746) and amino acid sequence (SEQ ID. NO.: 745) of 161P2F10B variant 1. The 3858 nucleotide sequence of 161P2F10B variant 1 is shown. The start methionine is underlined. The open reading frame extends from nucleic acid 44-2671 including the stop codon.

M E S T L T
1 ctactttattctgataaaaacaggcttatgcagctaccaggacaATGGAATCTACGTTGAC
7 L A T E Q P V K K N T L K K Y K I A C I
61 TTTAGCAACGGAACAAACCTGTTAAGAAGAACACTCTTAAGAAATATAAAATAGCTTGCAT
27 V L L A L L V I M S L G L G L G L G L R
121 TGTTCTTCTTGCTTGTGGTGTGATCATGTCACGGATTAGGCCCTGGGCTTGGACTCAG
47 K L E K Q G S C R K K C F D A S F R G L
181 GAAACTGGAAAAGCAAGGCAGCTGCAGGAAGAAGTGTGTTGATGCATCATTAGAGGACT
67 E N C R C D V A C K D R G D C C C W D F E
241 GGAGAACTGCCCCGTGTGATGTGGCATGTAAAGACCGAGGTGATTGCTGCTGGATTGTA
87 D T C V E S T R I W M C N K F R C G E T
301 AGACACCTGTGTGGAAATCAACTCGAATATGGATGTGCAATAAATTCTGTTGGAGAGAC
107 R L E A S L C S C S D D C L Q R K D C C
361 CAGATTAGAGGCCAGCCTTGTCTTGTGTTAGATGACTGTTGCTGAGAGAAAGATTGCTG
127 A D Y K S V C Q G E T S W L E E N C D T
421 TGCTGACTATAAGAGTGTGTTGCCAAGGAGAAACCTCATGGCTGGAAAGAAAATGTGACAC
147 A Q Q S Q C P E G F D L P P V I L F S M
481 AGCCCAGCAGTCTCAGTGCCAGAAGGGTTGACCTGCCACCAGTTATCTGTTTCTAT
167 D G F R A E Y L Y T W D T L M P N I N K
541 GGATGGATTAGAGCTGAATATTATACACATGGGATACTTTAATGCCAAATATCAATAA
187 L K T C G I H S K Y M R A M Y P T K T F
601 ACTGAAAACATGTGGAAATTCAATTCAAATACATGAGAGCTATGTATCCTACCAAAACCTT
207 P N H Y T I V T G L Y P E S H G I I D N
661 CCCAAATCATTACACCATTGTCAACGGGCTGTATCCAGAGTCACATGGCATCATTGACAA
227 N M Y D V N L N K N F S L S S K E Q N N
721 TAATATGTATGATGTAATCTCAACAAGAATTTCACCTTCTCAAAGGAACAAATAA
247 P A W W H G Q P M W L T A M Y Q G L K A
781 TCCAGCCTGGTGGCATGGCAACCAATGTGGCTGACAGCAATGTATCAAGGTTAAAAGC
267 A T Y F W P G S E V A I N G S F P S I Y
841 CGCTACCTACTTTGGCCCGGATCAGAAGTGGCTATAAATGGCTCCTTCCTCCATATA

287 M P Y N G S V P F E E R I S T L L K W L
 901 CATGCCCTAACCGGAAGTGTCCCATTGAAAGAGAGGATTTCTACACTGTTAAAATGGCT
 307 D L P K A E R P R F Y T M Y F E E P D S
 961 GGACCTGCCAAAGCTGAAAGACCAGGTTTATACCATGTTTGAAAGAACCTGATTC
 327 S G H A G G P V S A R V I K A L Q V V D
 1021 CTCTGGACATGCAGGTGGACCAGTCAGTGCCAGAGTAATTAAAGCCTTACAGGTAGTAGA
 347 H A F G M L M E G L K Q R N L H N C V N
 1081 TCATGCTTTGGGATGTTGATGGAAGGCCTGAAGCAGCGGAATTGACACAACGTGTCAA
 367 I I L L A D H G M D Q T Y C N K M E Y M
 1141 TATCATCCTCTGGCTGACCATGGAATGGACCAGACTTATTGTAACAAGATGGAATACAT
 387 T D Y F P R I N F F Y M Y E G P A P R I
 1201 GACTGATTATTTCCAGAATAACTCTTACATGTAACAGGGCTGCCCGCAT
 407 R A H N I P H D F F S F N S E E I V R N
 1261 CCGAGCTCATAATATACCTCATGACTTTAGTTAATTCTGAGGAAATTGTTAGAAA
 427 L S C R K P D Q H F K P Y L T P D L P K
 1321 CCTCAGTTGCCGAAACCTGATCACGATTCAGCCATTGACTCCTGATTGCCAA
 447 R L H Y A K N V R I D K V H L F V D Q Q
 1381 GCGCACTGCACATGCCAAGAACGTCAGAACATGACAAAGTTCATCTTGTGGATCAACA
 467 W L A V R S K S N T N C G G G N H G Y N
 1441 GTGGCTGGCTGTTAGGAGTAAATCAAATCAAATTGAGGAGGCAACCATGGTTATAA
 487 N E F R S M E A I F L A H G P S F K E K
 1501 CAATGAGTTAGGAGCATGGAGGCTATCTTCTGGCACATGGACCCAGTTAAAGGAA
 507 T E V E P F E N I E V Y N L M C D L L R
 1561 GACTGAAGTTGAAACCATTGAAAATATTGAAAGTCTATAACCTAATGTGTGATCTCTACG
 527 I Q P A P N N G T H G S L N H L L K V P
 1621 CATTCAACCAGCACCAAACATGGAACCCATGGTAGTTAAACCATCTCTGAAGGTGCC
 547 F Y E P S H A E E V S K F S V C G F A N
 1681 TTTTTATGAGGCCATCCATGCGAGGGAGGTGTCAAAGTTCTGTTGGCTTGCTAA
 567 P L P T E S L D C F C P H L Q N S T Q L -
 1741 TCCATTGCCACAGAGTCTCTGACTGTTCTGCCCTCACCTACAAAATAGTACTCAGCT
 587 E Q V N Q M L N L T Q E E I T A T V K V
 1801 GGAACAAGTGAATCAGATGCTAAATCTCACCCAGAACAGAACAGTGAAAGT
 607 N L P F G R P R V L Q K N V D H C L L Y
 1861 AAATTGCCATTGGAGGCCTAGGGTACTGCAGAAGAACGTGGACCACTGTCCTTTA
 627 H R E Y V S G F G K A M R M P M W S S Y
 1921 CCACAGGGAATATGTCAGTGGATTGGAAAGCTATGAGGATGCCATGTGGAGTTCTAC
 647 T V P Q L G D T S P L P P T V P D C L R
 1981 CACAGTCCCCAGTTGGAGACACATCGCCTCTGCCTCCACTGTCCCAGACTGTCTGCG

667 A D V R V P P S E S Q K C S F Y L A D K
2041 GGCTGATGTCAGGGTTCCTCCTCTGAGAGCCAAAATGTCCTCTATTAGCAGACAA
687 N I T H G F L Y P P A S N R T S D S Q Y
2101 GAATATCACCCACGGCTTCCTCTATCCCTGCCAGCAATAGAACATCAGATAGCCAATA
707 D A L I T S N L V P M Y E E F R K M W D
2161 TGATGCTTAATTACTAGCAATTGGTACCTATGATGAAGAATTCAAGAAAAATGTGGG
727 Y F H S V L L I K H A T E R N G V N V V
2221 CTACTCCACAGTGTCTTCTTATAAACATGCCACAGAAAGAAATGGAGTAAATGTGGT
747 S G P I F D Y N Y D G H F D A P D E I T
2281 TAGTGGACCAATTGATTATAATTATGATGGCCATTGATGCTCCAGATGAAATTAC
767 K H L A N T D V P I P T H Y F V V L T S
2341 CAAACATTTAGCCAACACTGATGTTCCATCCAAACACACTACTTGTTGGTGTGACCAG
787 C K N K S H T P E N C P G W L D V L P F
2401 TTGTAAAAACAAGAGCCACACACCGGAAACTGCCCTGGGTGGATGTCCTACCCCT
807 I I P H R P T N V E S C P E G K P E A L
2461 TATCATCCCTCACCGACCTACCAACGTGGAGAGCTGTCTGAAGGTAAACCAAGAGCTCT
827 W V E E R F T A H I A R V R D V E L L T
2521 TTGGGTTGAAGAAAGATTACAGCTCACATTGCCGGTCCGTGATGTAGAACTTCTCAC
847 G L D F Y Q D K V Q P V S E I L Q L K T
2581 TGGGCTTGACTTCTATCAGGATAAAGTCAGCCTGTCTCTGAAATTTCGAACAAAGAC
867 Y L P T F E T T I *
2641 ATATTTACCAACATTGAAACCCTATTAAActtaataatgtctacttaatataattt
2701 actgtataaaagtaattttggaaaataataagtgatTTTCTggagaattgtaaaataaa
2761 gttttcattttccctaaaaaaaacccgaattccgggttggaggctgaggcagga
2821 gactcgcttgaaacccggaggcagaggtgcagttagccaagattgcgcattgcactcc
2881 agagcctgggtgacagagcaagactacatctaaaaataaaataaaataaaagtaa
2941 caataaaaataaaaagaacagcagagagaatgagaacaggagaatgtcacaaactattgc
3001 aaaactgttacactgggtggctctccaagaagatactggaatcttcagccatttg
3061 ctttcagaagtagaaaccagcaaaccacctctaagcggagaacatacgtattttatta
3121 agtagctctgggaaggaaaataaaagttgatagctccctgattggaaaaatgcac
3181 aattaataaagaatgaagatgaaagaaagcatgcttatgtttaacacaaaaaattca
3241 caaacgttggtgaaaggaaaacagttatagaaaacattactttactaaaagctggaaaa
3301 ttttcagttggatgcactgacaaaaaagaacgggattccaggcataaagtggcgtga
3361 gctacagagggcaccatgtggctcagtggaaagaccctcaagattccatttgaa
3421 cagagcaaaggcacttcgcaggagaagggtttaaattatgggtccaaagccaaatgc
3481 aaagcgagcaattgcagcataactgttctccttagacaggcgtgagtggccaaaatac
3541 acagttacacacagttgactattagccactgccagaaaacaggctgacagccctggagaca
3601 agggaaaggcaggtggtagttcatggagagaaaggagatttagaaccagcaca

3661 tccactggagatgctggccaccagacccctcccagtcaataaagtctggtgcctcattt
3721 gatctcagcctcatcatgaccctggagagacccctgataccatctgccagtccccgacagc
3781 ttaggcactccttgccatcaacctgaaaaaaaaaaaaaaaggctccaggctccctgccccac
3841 ccattcaggccggaattc

Figure 3A. Amino acid sequence of 161P2F10B (SEQ ID. NO. : 747). The 161P2F10B protein has 875 amino acids.

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1 MESTLTLATE QPVKKNTLKK YKIACTIVLLA LLVIMSLGLG LGLGLRKLEK QGSCRKKCFD
61 ASFRGLENCR CDVACKDRGD CCWDFEDTCV ESTRIWMCNK FRCGETRLEA SLCSCSDDCL
121 QKKDCCADYK SVCQGETSWL EENCDTAQQS QCPEGFDLPP VILFSMDGFR AEYLYTWDTL
181 MPNINKLKTG GIHSKYMRAM YPTKTFPNHY TIVTGLYPES HGIIDNNMYD VNLNKNFSLS
241 SKEQNNPAWW HQQPMLWTAM YQGLKAATYF WPGSEVAING SFPSIYMPYN GSVPFEERIS
301 TLLKWLDLKP AERPRFYTMY FEEPDSSGHA GGPGVSARVIK ALQVVDHAFG MLMEGLKQRN
361 LHNCVNIIILL ADHGMDQTYC NKMEYMTDYF PRINFFYMYE GPAPRIRAHN IPHDFFSFNS
421 EEIVRNLSGR KPDQHFKPYL TPDLPKRLHY AKNRVIDKVN LFVDQQWLAV RSKSNTNCGG
481 GNHGYNNEFR SMEAIFIHLA PSFKEKTEVE PFENIEVYNL MCDLLRIQPA PNNGTHGSLN
541 HLLKVPFYEP SHAEEVSKFS VCGFANPLPT ESLDCFCPHL QNSTQLEQVN QMLNLTQEEI
601 TATVKVNLPF GRPRVLQKNV DHCLLYHREY VSGFGKAMRM PMWSSYTVPQ LGDTSPPLPT
661 VPDCRLRADVR VPPSESQKCS FYLADKNITH GFLYPPASNR TSDSQYDALI TSNLVPMYEE
721 FRKMWDYFHS VLLIKHATER NGVVNVSGPI FDNYNDGHFD APDEITKHLA NTDVPIPHY
781 FVVLTSCKNK SHTPENCPGW LDVLPFIIPH RPTNVESCPE GKPEALWVEE RFTAHIAARVR
841 DVELLTGLDF YQDKVQPVSE ILQLKTYLPT FETTI
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Figure 3B. Amino acid sequence of 161P2F10B variant 1 (SEQ ID. NO. : 748). The 161P2F10B variant 1 protein has 875 amino acids.

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1 MESTLTLATE QPVKKNTLKK YKIACTIVLLA LLVIMSLGLG LGLGLRKLEK QGSCRKKCFD
61 ASFRGLENCR CDVACKDRGD CCWDFEDTCV ESTRIWMCNK FRCGETRLEA SLCSCSDDCL
121 QRKDCCADYK SVCQGETSWL EENCDTAQQS QCPEGFDLPP VILFSMDGFR AEYLYTWDTL
181 MPNINKLKTG GIHSKYMRAM YPTKTFPNHY TIVTGLYPES HGIIDNNMYD VNLNKNFSLS
241 SKEQNNPAWW HQQPMLWTAM YQGLKAATYF WPGSEVAING SFPSIYMPYN GSVPFEERIS
301 TLLKWLDLKP AERPRFYTMY FEEPDSSGHA GGPGVSARVIK ALQVVDHAFG MLMEGLKQRN
361 LHNCVNIIILL ADHGMDQTYC NKMEYMTDYF PRINFFYMYE GPAPRIRAHN IPHDFFSFNS
421 EEIVRNLSGR KPDQHFKPYL TPDLPKRLHY AKNRVIDKVN LFVDQQWLAV RSKSNTNCGG
481 GNHGYNNEFR SMEAIFIHLA PSFKEKTEVE PFENIEVYNL MCDLLRIQPA PNNGTHGSLN
541 HLLKVPFYEP SHAEEVSKFS VCGFANPLPT ESLDCFCPHL QNSTQLEQVN QMLNLTQEEI
601 TATVKVNLPF GRPRVLQKNV DHCLLYHREY VSGFGKAMRM PMWSSYTVPQ LGDTSPPLPT
661 VPDCRLRADVR VPPSESQKCS FYLADKNITH GFLYPPASNR TSDSQYDALI TSNLVPMYEE
721 FRKMWDYFHS VLLIKHATER NGVVNVSGPI FDNYNDGHFD APDEITKHLA NTDVPIPHY
781 FVVLTSCKNK SHTPENCPGW LDVLPFIIPH RPTNVESCPE GKPEALWVEE RFTAHIAARVR
841 DVELLTGLDF YQDKVQPVSE ILQLKTYLPT FETTI
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Figure 4

Figure 4A. Amino acid alignment of 161P2F10B (SEQ_ID_No.747) with ENPP3 (SEQ_ID_No.765).

161P2F10B	m e s t l t l a t e q p v k k n t l k y k i a c i v i l l a l i v i m s l g l g	40
ENPP3	m e s t l t l a t e q p v k k n t l k y k i a c i v i l l a l i v i m s l g l g	40
161P2F10B	1 9 1 9 l r k l e k q q s c r k k c f d a s s f r g l e n c r c d v a c k d r g d	80
ENPP3	1 9 1 9 l r k l e k q q s c r k k c f d a s s f r g l e n c r c d v a c k d r g d	80
161P2F10B	c c w d f e d t c v e s t r i w m c n k f r c g e t r l e a s l c s c s d d c l	120
ENPP3	c c w d f e d t c v e s t r i w m c n k f r c g e t r l e a s l c s c s d d c l	120
161P2F10B	q k k d c c a d y k s v c q g e t s w l e e n c d t a q q s q c p e g f d 1 p p	160
ENPP3	q k k d c c a d y k s v c q g e t s w l e e n c d t a q q s q c p e g f d 1 p p	160
161P2F10B	v i l f s m d g f r a e y l Y t w d t l m p n i n k l k t c g i h s k y m r a m	200
ENPP3	v i l f s m d g f r a e y l Y t w d t l m p n i n k l k t c g i h s k y m r a m	200
161P2F10B	y p t k t f p n h y t i v t g l y p e s h g i i d n n m y d v n l n k n f s l s	240
ENPP3	y p t k t f p n h y t i v t g l y p e s h g i i d n n m y d v n l n k n f s l s	240
161P2F10B	s k e q n n p a w w h g q p m w l t a m y q g l k a a t y f w p g s e v a i n g	280
ENPP3	s k e q n n p a w w h g q p m w l t a m y q g l k a a t y f w p g s e v a i n g	280
161P2F10B	s f p s i y m p y n g s y p f e e r i s t l l k w l d l p k a e r p r f y t m y	320
ENPP3	s f p s i y m p y n g s y p f e e r i s t l l k w l d l p k a e r p r f y t m y	320
161P2F10B	f e e p d s s g h a g g p v s a r v i k a l q v v d h a f g m l m e g l k q r n	360
ENPP3	f e e p d s s g h a g g p v s a r v i k a l q v v d h a f g m l m e g l k q r n	360
161P2F10B	l h n c v n i l l a d h g m d q t y c n k m e y m t d y f p r i n f f y m y e	400
ENPP3	l h n r v n i l l a d h g m d q t y c n k m e y m t d y f p r i n f f y m y e	400
161P2F10B	g p a p r i r a h n i p h d f f s f n s e e i v r n l s c r k p d q h f k p y l	440
ENPP3	g p a p r i r a h n i p h d f f s f n s e e i v r n l s c r k p d q h f k p y l	440
161P2F10B	t p d l p k r l h y a k n v r i d k v h l f v d q q w l a v r s s k s n t n c g g	480
ENPP3	t p d l p k r l h y a k n v r i d k v h l f v d q q w l a v r s s k s n t n c g g	480

161P2F10B ENPP3	g n h g y n n e f r s m e a i f l a h g p s f k e k t e v e p f e n i e v y n l g n h g y n n e f r s m e a i f l a h g p s f k e k t e v e p f e n i e v y n l	520 520
161P2F10B ENPP3	m c d l l r i q p a p n n g t h g s l n h l l k v p f y e p s h a e e v s k f s m c d l l r i q p a p n n g t h g s l n h l l k v p f y e p s h a e e v s k f s	560 560
161P2F10B ENPP3	v c g f a n p l p t e s l d c f c p h l q n s t q l e q v n q m l n t q e e i v c g f a n p l p t e s l d c f c p h l q n s t q l e q v n q m l n t q e e i	600 600
161P2F10B ENPP3	t a t v k v n l p f g r p r v l q k n v d h c l l y h r e y v s g f g k a m r m t a t v k v n l p f g r p r v l q k n v d h c l l y h r e y v s g f g k a m r m	640 640
161P2F10B ENPP3	p m w s s y t v p q l 9 d t s p l p p t v p d c l r a d v r v p p s e s q k c s p m w s s y t v p q l 9 d t s p l p p t v p d c l r a d v r v p p s e s q k c s	680 680
161P2F10B ENPP3	f y l a d k n i t h g f l 1 y p p a s n r t s d s q y d a l i t s n l v p m y e e f y l a d k n i t h g f l 1 y p p a s n r t s d s q y d a l i t s n l v p m y e e	720 720
161P2F10B ENPP3	f r k m w d y f h s v l 1 i k h a t e r n g v n v v s g p i f d y n y d g h f d f r k m w d y f h s v l 1 i k h a t e r n g v n v v s g p i f d y n y d g h f d	760 760
161P2F10B ENPP3	a p d e i t k h l a n t d v p i p t h y f v v l t s c k n k s h t p e n c p g w a p d e i t k h l a n t d v p i p t h y f v v l t s c k n k s h t p e n c p g w	800 800
161P2F10B ENPP3	l d v l p f i i p h r p t n v e s c p e g k p e a l w v e e r f t a h i a r v r l d v l p f i i p h r p t n v e s c p e g k p e a l w v e e r f t a h i a r v r	840 840
161P2F10B ENPP3	d v e l l t g l 1 d f y q d k v q p v s e i l q 1 k t y l p t f e t t i d v e l l t g l 1 d f y q d k v q p v s e i l q 1 k t y l p t f e t t i	875 875

Figure 4b. Amino acid alignment of 161P2F10B (SEQ.ID.No.74) with 161P2F10B variant1 (SEQ.ID.No.748).

161P2F10B	me st l t l a t e q p v k n t l k k y k i a c i v l l v i m s i g l 1 9	40
161P2F10B variant 1	me st l t l a t e q p v k n t l k k y k i a c i v l l v i m s i g l 1 9	40
161P2F10B	1 g l 1 g l 1 r k l e k q g s c r k k c f d a s f r g l e n c r c d v a c k d r g d	80
161P2F10B variant 1	1 g l 1 g l 1 r k l e k q g s c r k k c f d a s f r g l e n c r c d v a c k d r g d	80

161P2F10B	variant 1	ccwdfedtcvestriwmcnkfrggetrleas1cscsddcl ccwdfedtcvestriwmcnkfrggetrleas1cscsddcl	120 120
161P2F10B	variant 1	q[kdcca dyksvcq getswlein ctaqssqcpe gfd1pp q[kdcca dyksvcq getswlein ctaqssqcpe gfd1pp	160 160
161P2F10B	variant 1	vilfsmdgfraeylytwdtlmpninklktcgihskymram vilfsmdgfraeylytwdtlmpninklktcgihskymram	200 200
161P2F10B	variant 1	yptktfpnhytivtglypeshgidi dnnmydvnlnknfs1s yptktfpnhytivtglypeshgidi dnnmydvnlnknfs1s	240 240
161P2F10B	variant 1	skeqnnpawwh9qpnmwl tamyqg1kaatyfwpgsevaing skeqnnpawwh9qpnmwl tamyqg1kaatyfwpgsevaing	280 280
161P2F10B	variant 1	sfpssi ympyngs v pfeer ist lkwld1pkaerprfytmy sfpssi ympyngs v pfeer ist lkwld1pkaerprfytmy	320 320
161P2F10B	variant 1	feepdssghaggpvsarvik alqvv dha f gmlmeg1kqrn feepdssghaggpvsarvik alqvv dha f gmlmeg1kqrn	360 360
161P2F10B	variant 1	lhncvni illad h gmd q tyc nk me y m tdy f print f y my e lhnr vni illad h gmd q tyc nk me y m tdy f print f y my e	400 400
161P2F10B	variant 1	gpa prirahni p h d f fsfn see ivrn l scrk pd q h f k p y 1 gpa prirahni p h d f fsfn see ivrn l scrk pd q h f k p y 1	440 440
161P2F10B	variant 1	tpd1pkrlhyakanvridkvhl f v dqq wla vrsksntncgg tpd1pkrlhyakanvridkvhl f v dqq wla vrsksntncgg	480 480
161P2F10B	variant 1	gnhgy nne frsmeaif lahgp s f ke kte v epfenievynl gnhgy nne frsmeaif lahgp s f ke kte v epfenievynl	520 520
161P2F10B	variant 1	mcd11r1q papnngthgs1nh11kvpfyepshae evskfs mcd11r1q papnngthgs1nh11kvpfyepshae evskfs	560 560
161P2F10B	variant 1	v cgfanpl ptes1dcfcph1qnstqleqvnqmlnlqt gee i v cgfanpl ptes1dcfcph1qnstqleqvnqmlnlqt gee i	600 600

161P2F10B variant 1 161P2F10B tatvknlpfgrprvlqknvdhcillyhreyvssgfgkamrm 640
161P2F10B variant 1 161P2F10B tatvknlpfgrprvlqknvdhcillyhreyvssgfgkamrm 640

161P2F10B variant 1 161P2F10B pmwssytvpq19dtsplppvpdcldradvrppsesqkcs 680
161P2F10B variant 1 161P2F10B pmwssytvpq19dtsplppvpdcldradvrppsesqkcs 680

161P2F10B variant 1 161P2F10B fyladknithgfflyppassnrtssqydalitsnlvpmyee 720
161P2F10B variant 1 161P2F10B fyladknithgfflyppassnrtssqydalitsnlvpmyee 720

161P2F10B variant 1 161P2F10B frkmwdyfhsvlilikhaterngvnvsqqpifdynydghfd 760
161P2F10B variant 1 161P2F10B frkmwdyfhsvlilikhaterngvnvsqqpifdynydghfd 760

161P2F10B variant 1 161P2F10B apdeitkhiantdvpipiptyfvvltsccknkshtpencpgw 800
161P2F10B variant 1 161P2F10B apdeitkhiantdvpipiptyfvvltsccknkshtpencpgw 800

161P2F10B variant 1 161P2F10B ldvlppfiiphrrptnvescpeggkpealwveerftahiarvr 840
161P2F10B variant 1 161P2F10B ldvlppfiiphrrptnvescpeggkpealwveerftahiarvr 840

161P2F10B variant 1 161P2F10B dvelltg1dfyqdkvqpvsseilq1kt1ptfetti 875
161P2F10B variant 1 161P2F10B dvelltg1dfyqdkvqpvsseilq1kt1ptfetti 875

4C) Alignment of 161P2F10B (SEQ. ID. No. 749) and SNP variant 2 (SEQ. ID. No. 750) carrying a T to P mutation at position 874.

Query: 492 MEAIFLAHGPSKEKTEVEPFENIEVYNLMCDLLRIQPAPNNGTHGSLNHLKVPFYEPS 551
MEAIFLAHGPSKEKTEVEPFENIEVYNLMCDLLRIQPAPNNGTHGSLNHLKVPFYEPS
Sbjct: 1 MEAIFLAHGPSKEKTEVEPFENIEVYNLMCDLLRIQPAPNNGTHGSLNHLKVPFYEPS 60

Query: 552 HAAEVSKFSVCGFANPLPTESLDCFCPHLQNSTOLEQVNQMLNLTQEEITATVKVNLPFG 611
HAAEVSKFSVCGFANPLPTESLDCFCPHLQNSTOLEQVNQMLNLTQEEITATVKVNLPFG
Sbjct: 61 HAAEVSKFSVCGFANPLPTESLDCFCPHLQNSTOLEQVNQMLNLTQEEITATVKVNLPFG 120

Query: 612 RPRVLQKNVDHCLLYHREYVSGFGKAMRMPMWSSYTVPQLGDTSPLPPTVPDCLRADVRV
671 RPRVLQKNVDHCLLYHREYVSGFGKAMRMPMWSSYTVPQLGDTSPLPPTVPDCLRADVRV
Sbjct: 121 RPRVLQKNVDHCLLYHREYVSGFGKAMRMPMWSSYTVPQLGDTSPLPPTVPDCLRADVRV 180

Query: 672 PPSESQKCSFYLADKNITHGFLYPPASNRTSDSQYDALITSNLVPMYEEFRKMWDFHHSV 731
PPSESQKCSFYLADKNITHGFLYPPASNRTSDSQYDALITSNLVPMYEEFRKMWDFHHSV
Sbjct: 181 PPSESQKCSFYLADKNITHGFLYPPASNRTSDSQYDALITSNLVPMYEEFRKMWDFHHSV 240

Query: 732 LLIKHATERNGVVSGPIFDNYDGHFDAPDEITKHLANTDVPIPTHYFVVLTSCKNKS 791
LLIKHATERNGVVSGPIFDNYDGHFDAPDEITKHLANTDVPIPTHYFVVLTSCKNKS
Sbjct: 241 LLIKHATERNGVVSGPIFDNYDGHFDAPDEITKHLANTDVPIPTHYFVVLTSCKNKS 300

Query: 792 HTPENCPGWLDPFIIPHRTNVESCPEGKPEALWVEERFTAHIARVRDVELLTGLDFY 851
HTPENCPGWLDPFIIPHRTNVESCPEGKPEALWVEERFTAHIARVRDVELLTGLDFY
Sbjct: 301 HTPENCPGWLDPFIIPHRTNVESCPEGKPEALWVEERFTAHIARVRDVELLTGLDFY 360

Query: 852 QDKVQPVSEILQLKTYLPTFETTI 875
QDKVQPVSEILQLKTYLPTFET I
Sbjct: 361 QDKVQPVSEILQLKTYLPTFETPI 384

Figure 5: 161P2F10B Hydrophilicity profile
(Hopp T.P., Woods K.R., 1981. Proc. Natl. Acad. Sci. U.S.A. 78:3824-3828)

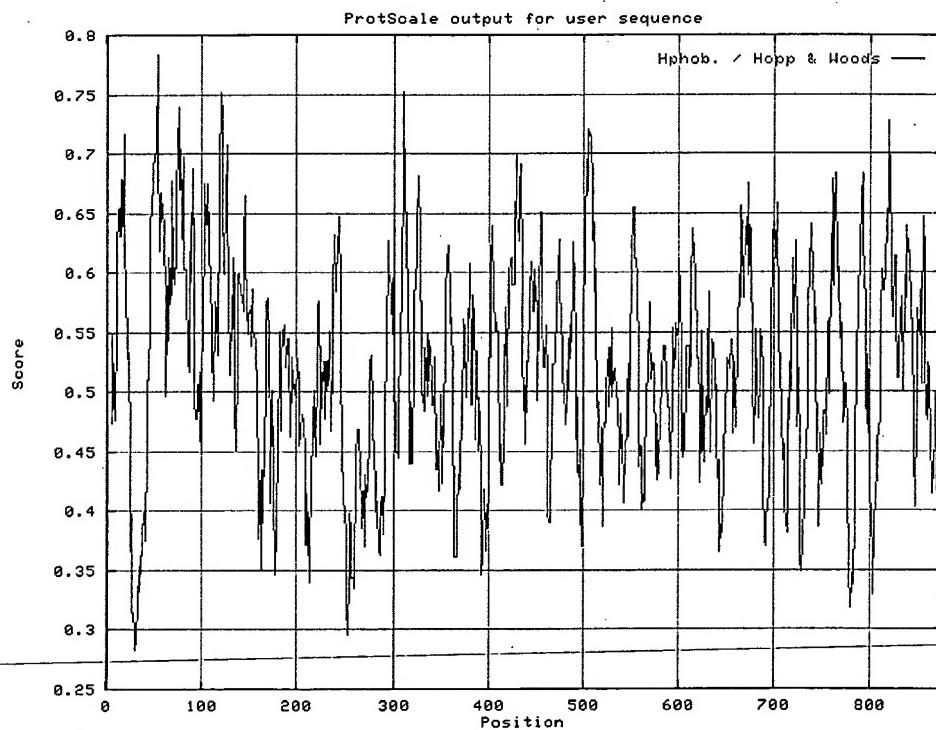


Figure 6: 161P2F10B Hydropathicity Profile
(Kyte J., Doolittle R.F., 1982. J. Mol. Biol. 157:105-132)

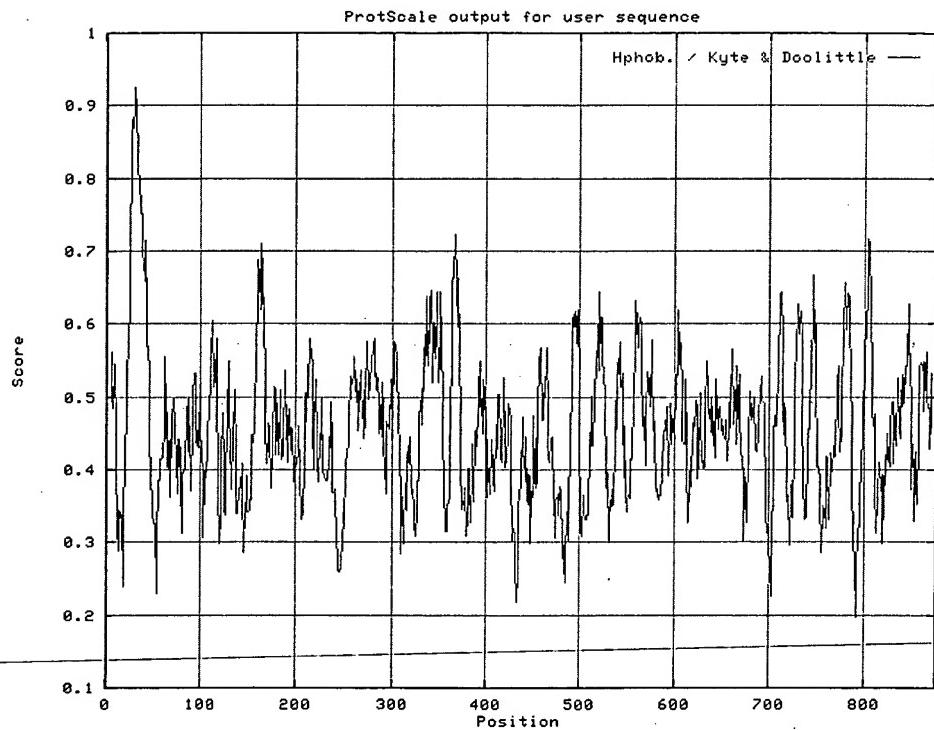


Figure 7: 161P2F10B % Accessible Residues Profile
(Janin J., 1979. Nature 277:491-492)

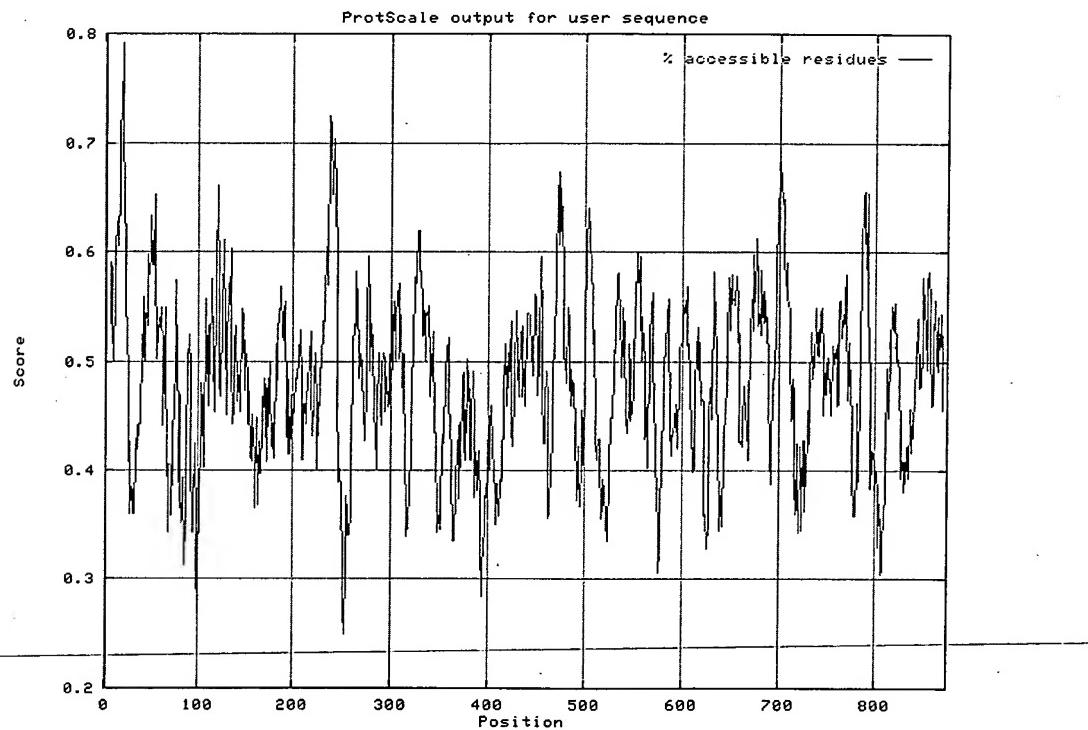


Figure 8: 161P2F10B Average Flexibility Profile
(Bhaskaran R., Ponnuswamy P.K., 1988.
Int. J. Pept. Protein Res. 32:242-255)

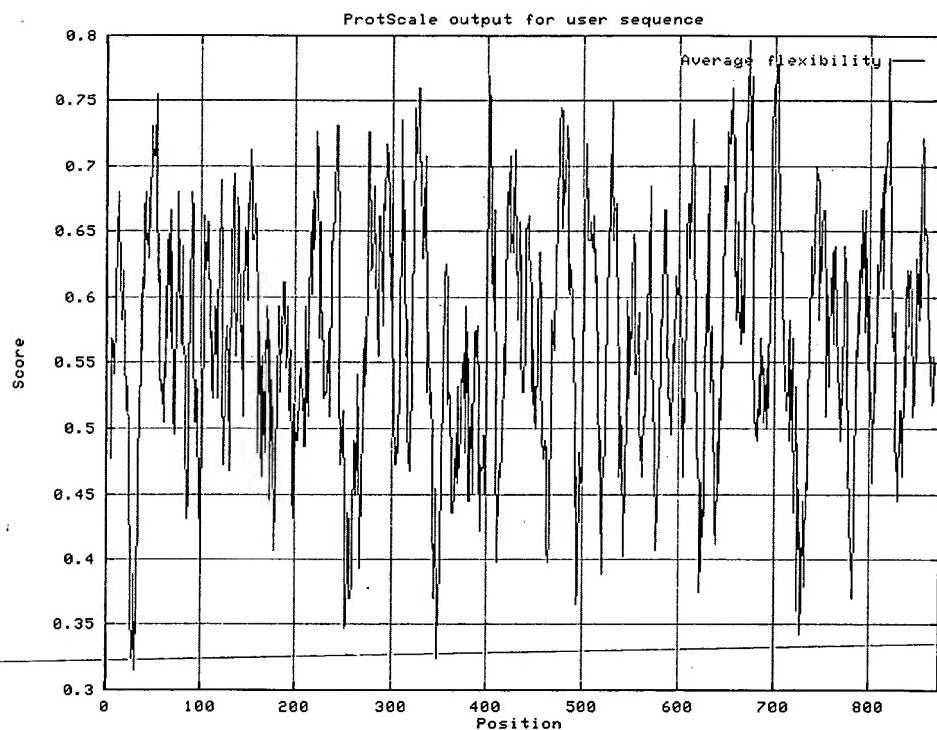


Figure 9: 161P2F10B Beta-turn Profile
(Deleage, G., Roux B. 1987. Protein Engineering 1:289-294)

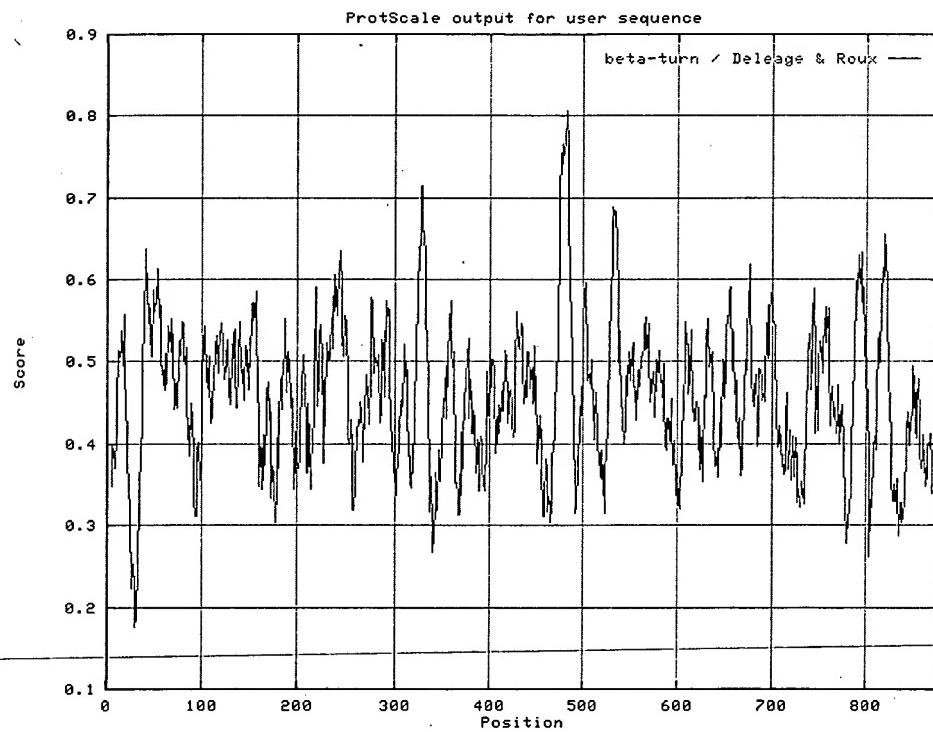


Figure 10: Expression of 161P2F10B by RT-PCR

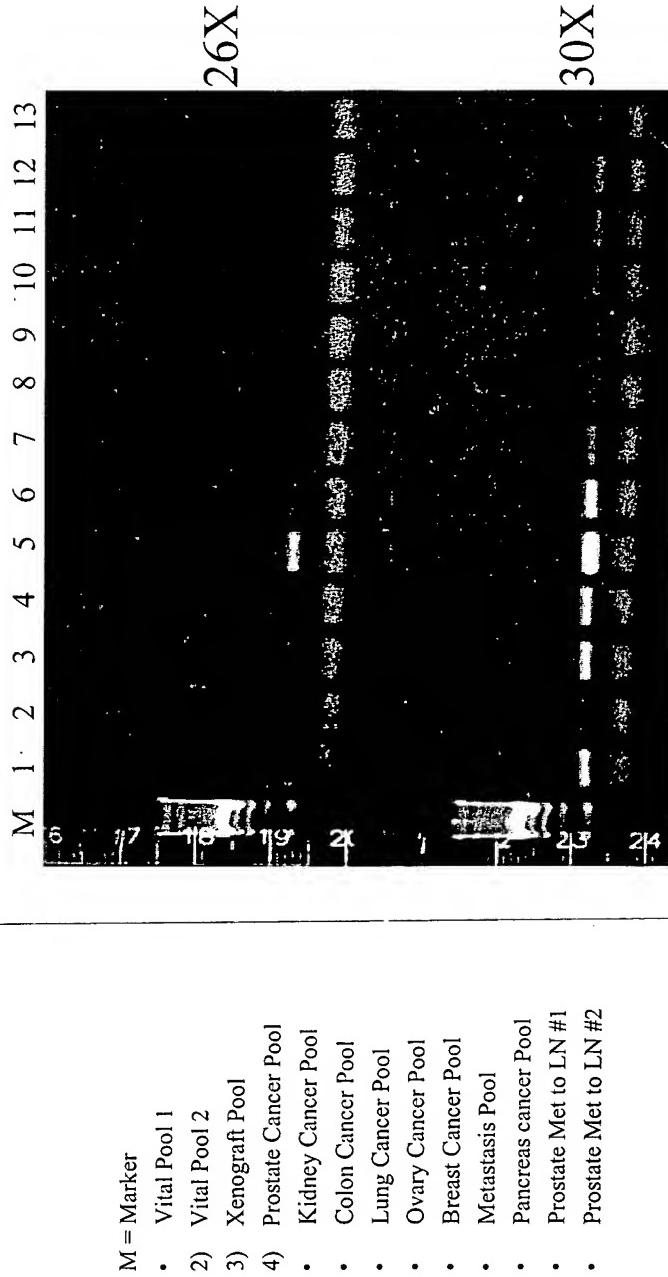


Figure 11: Expression of 161P2F10B in Normal Tissues

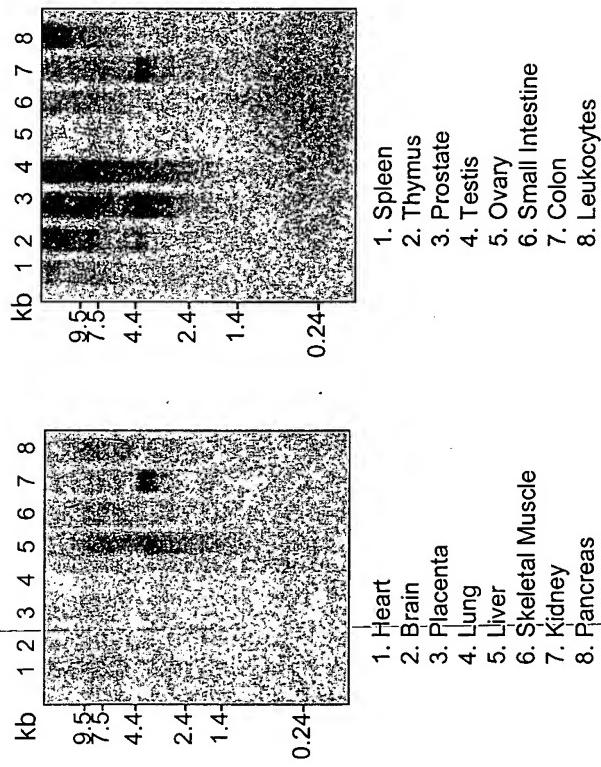


Figure 12: Expression of 161P2F10B in Patient Kidney Cancer Specimens and in Normal Tissues

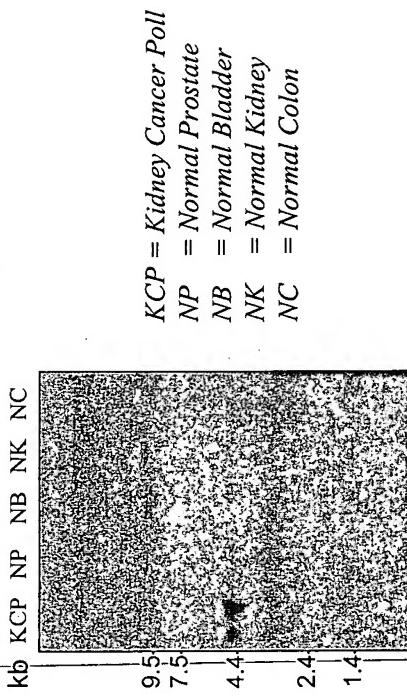
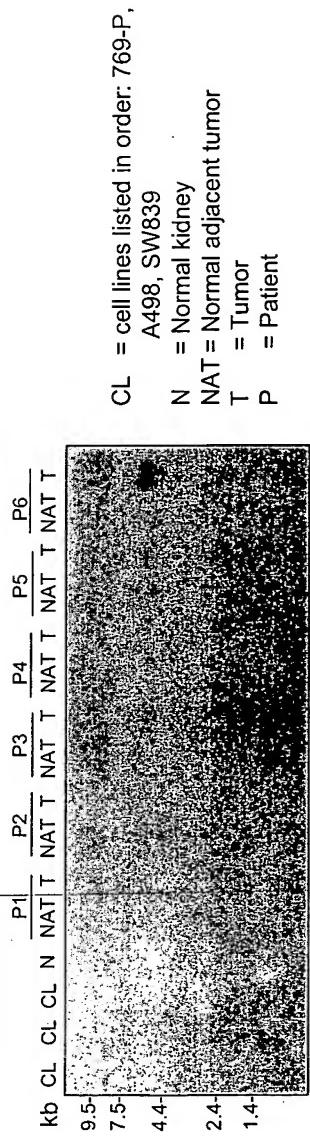
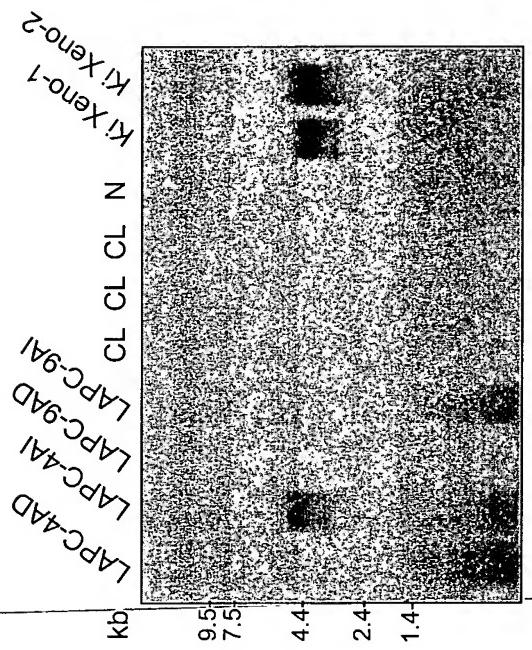


Figure 13: Expression of 161P2F10B in Kidney Cancer Patient Specimens



- P1 - Papillary carcinoma, stage I
- P2 - Invasive papillary carcinoma
- P3 - Clear cell type grade 1/3, focally 2/3
- P4 - Clear cell type, stage III
- P5 - Clear cell type, stage III
- P6 - Clear cell type, stage III

Figure 14: Expression of 161P2F10B in Kidney Cancer Xenografts



CL = cell lines listed in order: 769-P,
A498, Caki-1

N = Normal kidney

Ki Xeno = Kidney xenograft

Figure 15: Expression of 161P2F10B in Kidney Cancer Metastasis Specimens and in Normal Tissues

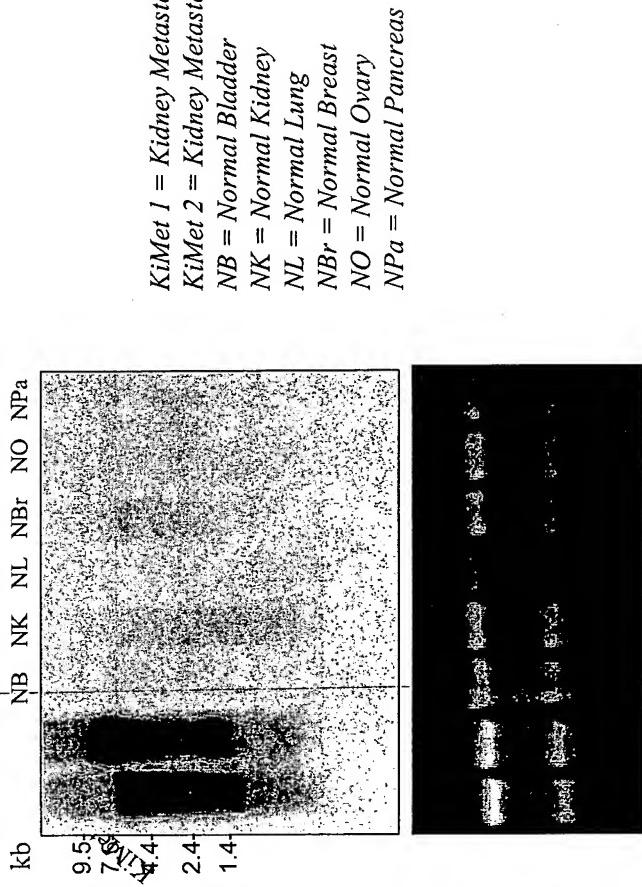


Figure 16: Expression of 161P2F10B Protein by Immunohistochemistry in Kidney Cancer Patient Specimens

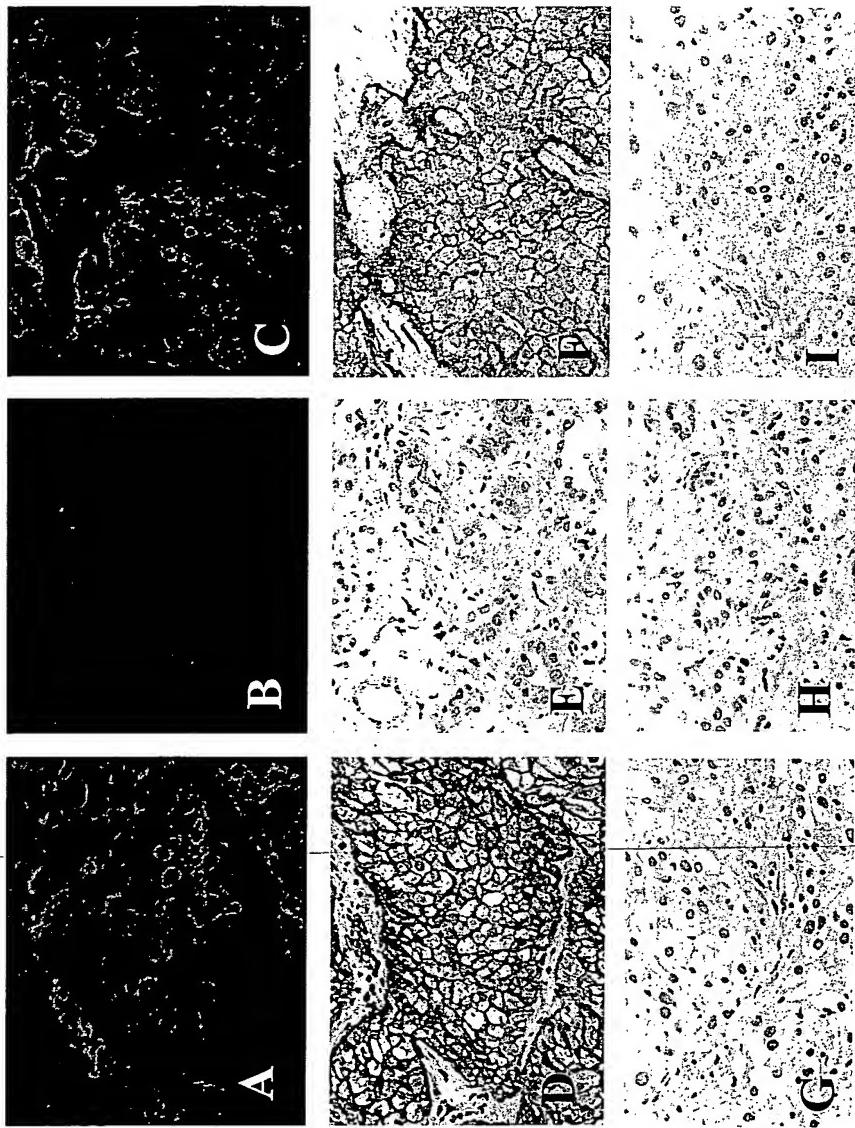
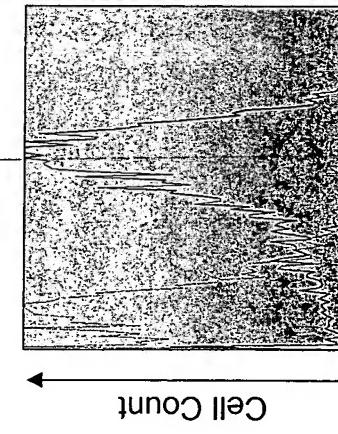


Figure 17: Expression of 161P2F10B Protein on the Cell Surface of
Renal Cell Carcinoma Xenografts

A. Clear Cell Carcinoma



B. Renal Cancer Metastasis to LN

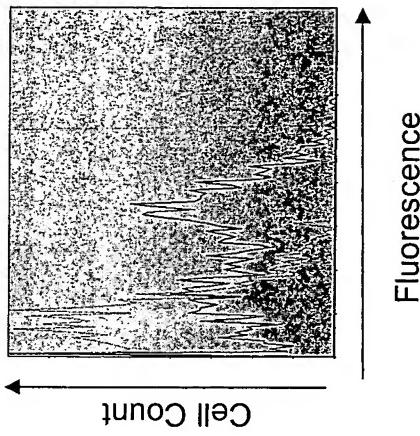


Figure 18: Expression of 161P2F10B Protein by Immunohistochemistry in Human Cancer Xenograft Tissues

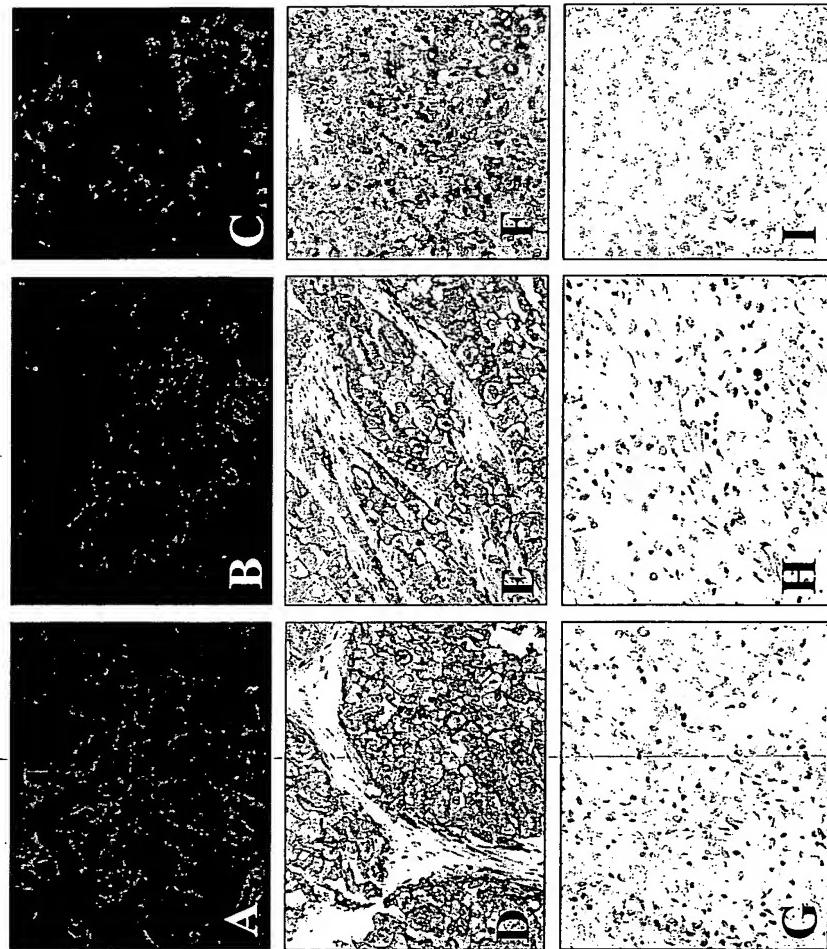


Figure 19A (Seq. ID. No. 751)

10 20 30 40 50 60 70
| | | | | | |
MESTLTLATEQPVKKNLKKYKIACTIVLLALLVIMSLGLGLGLRKLEKQGSCRKKCFDASFRGLENCR
cc
CDVACKDRGDCCWDFEDTCVESTIMCNKFRCGETRLEASLCSCSDCLQKKDCCADYKSVCQGETSWL
cc
EENCDTAQQSQCPEGFDLPPVILFMSMDGFRAEYLYTWTDLMPNINKLKTGCIHSKYMRAAMYPTKTFPNHY
cc
TIVTGLYPESHGIIIDNNMYDVNLNKNFSLSKEQNNPAWHGQPMWLTAAMYQGLKAATYFWPGSEVAING
ee
SFPPIYMPYNGSVPFEERISTLLKWLDPKAERPRFYTMFEEPDSSGHAGGPVSARVIKALQVVDHAFG
cc
MLMEGLKQRNLHNCVNILLADHGMDQTYCNKMEYMTDYFPRINFFYMYEGPAPRIRAHNIPHDFSFNS
hhhhhhhhhhccceee
EEIVRNLSCRKPQHFKPYLTPLPKRLHYAKNVRIDKVHLFVDDQQLAVRSKSNTNCGGGNHGYNEFR
hhhhhhhhcc
SMEAIFLAHGSPFKEKTEVEPFENIEVYNLMCDLLRIQPAPNNGTHGSLNHLLKVPFYEPSHAEVSKFS
hhhhhhhhcc
VCGFANPLPTESLDCCPHQLQNSTQLEQVNQMLNLTQEETATVKVNLPGRPRVLQKNVDHCLLYHREY
eeeeeeeeeeeecc
VSGFGKAMRMPWMSSYTVPQLGDTSPLPPTVPDCLRADVRVPPSESQKCSFYLADKNITHGFLYPPASNR
hhcc
TSDSQYDALITSNLVPMYEEFRKMWDYFHSVLLIKHATERNGVNVSQP1FDNYDGHFDAPDEITKHLA
cc
NTDVPIPTHYFVVLTSCKNKSHTPENCPGWLDLVPFIIPHRPTNVESCPEGKPEALWVEERFTAHIARVR
cc
DVELLTGLDFYQDKVQPVSEILQLKTYLPTFETTI
hheehcc

c: random coil (31.31%)

e: extended strand (11.31%)

h: alpha helix (57.37%)

Figure 19B

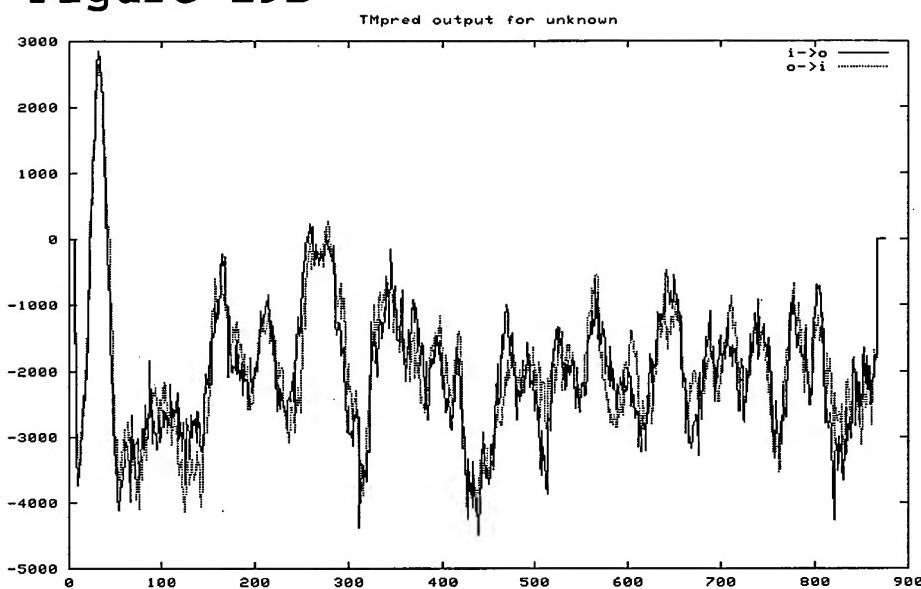


Figure 19C

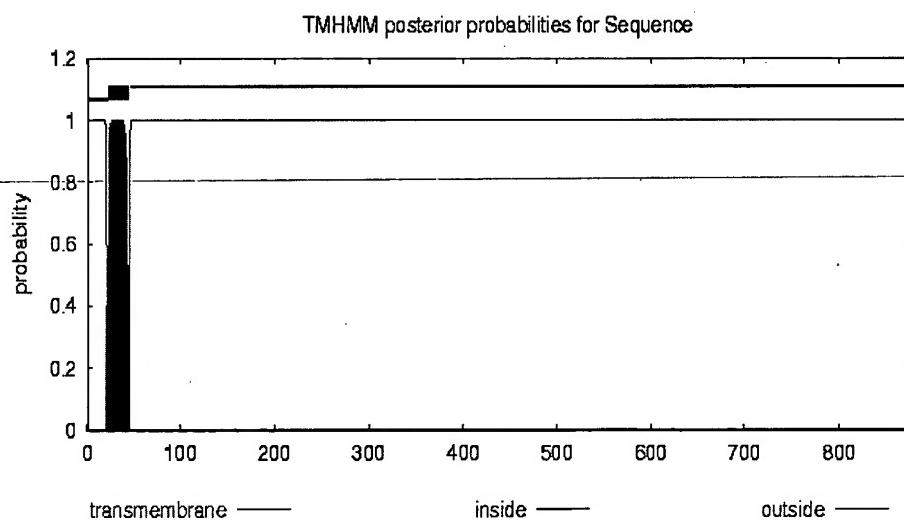


Figure 20 Expression of 161P2F10B in Human Patient Cancers by Western Blot

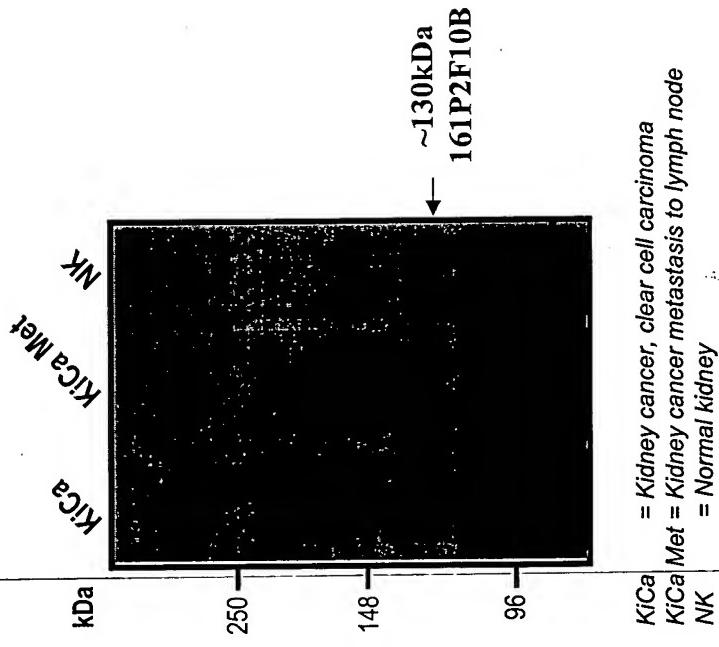
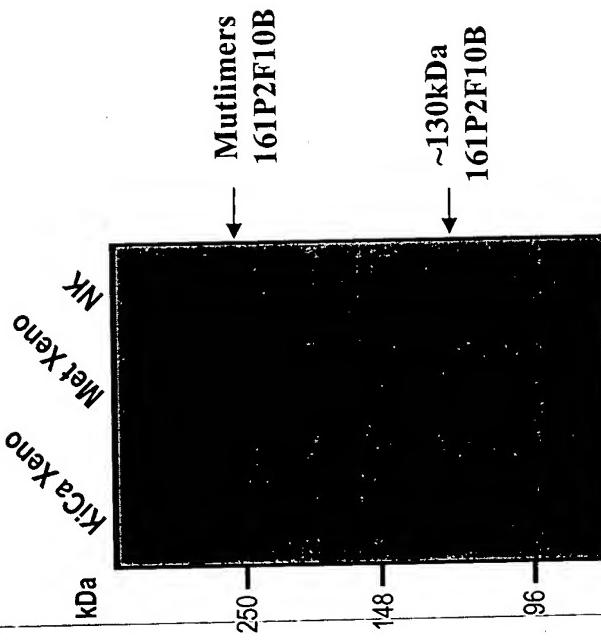


Figure 21

Expression of 161P2F10B in Human Xenograft
Tissues by Western Blot



KiCa Xeno = Xenograft of kidney cancer, clear cell carcinoma
Met Xeno = Xenograft from kidney cancer metastasis to lymph node
NK = Normal kidney